General

Guideline Title

Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed after prior chemotherapy.

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed after prior chemotherapy. London (UK): National Institute for Health and Care Excellence (NICE); 2015 Dec 16. 65 p. (Technology appraisal guidance; no. 374).

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: National Institute for Clinical Excellence (NICE). Erlotinib for the treatment of non-small-cell-lung cancer. London (UK): National Institute for Health and Clinical Excellence (NICE); 2008 Nov. 26 p. (Technology appraisal; no. 87).

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

Erlotinib is recommended as an option for treating locally advanced or metastatic non-small-cell lung cancer (NSCLC) that has progressed in people who have had non-targeted chemotherapy because of delayed confirmation that their tumour is epidermal growth factor receptor tyrosine kinase (EGFR-TK) mutation-positive, only if the company provides erlotinib with the discount agreed in the patient access scheme revised in the context of National Institute for Health and Care Excellence (NICE) technology appraisal guidance 258 .

Erlotinib is recommended as an option for treating locally advanced or metastatic NSCLC that has progressed after non-targeted chemotherapy in people with tumours of unknown EGFR-TK mutation status, only if:

- The result of an EGFR-TK mutation diagnostic test is unobtainable because of an inadequate tissue sample or poor-quality deoxyribonucleic acid (DNA) and
- The treating clinician considers that the tumour is very likely to be EGFR-TK mutation-positive and
- The person's disease responds to the first 2 cycles of treatment with erlotinib and
- The company provides erlotinib with the discount agreed in the patient access scheme revised in the context of NICE technology appraisal guidance 258 .

Erlotinib is not recommended for treating locally advanced or metastatic NSCLC that has progressed after non-targeted chemotherapy in people with tumours that are EGFR-TK mutation-negative.

Gefitinib is not recommended for treating locally advanced or metastatic NSCLC that has progressed after non-targeted chemotherapy in people with tumours that are EGFR-TK mutation-positive.

People whose treatment with erlotinib or gefitinib is not recommended in this NICE guidance, but was started within the National Health Service (NHS) before this guidance was published, should be able to continue treatment until they and their NHS clinician consider it appropriate to stop.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Non-small-cell lung cancer (NSCLC)

Guideline Category

Assessment of Therapeutic Effectiveness

Treatment

Clinical Specialty

Internal Medicine

Oncology

Pulmonary Medicine

Intended Users

Advanced Practice Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To evaluate the clinical effectiveness and cost-effectiveness of erlotinib and gefitinib for the treatment of advanced or metastatic non-small-cell lung cancer (NSCLC) after progression following prior chemotherapy

Target Population

Adults with locally advanced or metastatic (stage III/IV) non-small-cell lung cancer (NSCLC) that has progressed after prior chemotherapy

Interventions and Practices Considered

1. Erlotinib
2. Gefitinib (considered but not recommended)

Major Outcomes Considered

- Clinical effectiveness
  - Overall survival
  - Progression-free survival
  - Response rates
  - Adverse events
  - Health-related quality-of-life
- Cost-effectiveness
  - Incremental cost per life year (LY) gained
  - Incremental cost per quality-adjusted life year (QALY) gained

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform a systematic literature review on the technology considered in this appraisal and prepare an assessment report. The Assessment Report for this technology appraisal was prepared by the Liverpool Reviews and Implementation Group (LRiG) (see the "Availability of Companion Documents" field).

Assessment of Clinical Effectiveness

Search Strategy

In addition to searching the two manufacturers' submissions for relevant references the following databases were searched for studies of erlotinib and gefitinib:

- EMBASE (Ovid) 1974 to 2013 April week 3
- Medline (Ovid) 1946 to 2013 April 26
- The Cochrane Library to 2013 April 28
- PUBMED 2013 January 2010 to 2013 April 28

The results were entered into an EndNote X5 library and the references were de-duplicated. Full details of the search strategies are presented in Appendix 1 of the Assessment Report.

Inclusion and Exclusion Criteria

Two reviewers independently screened all titles and abstracts identified via searching and obtained full paper manuscripts that were considered relevant by either reviewer (stage 1). The relevance of each study was assessed according to the criteria set out below (stage 2). Studies that did not meet the criteria were excluded and their bibliographic details were listed alongside reasons for their exclusion. Any discrepancies were resolved by consensus and where necessary, a third reviewer was consulted.

Study Design

Only randomised controlled trials (RCTs) were included in the assessment of clinical effectiveness.

Interventions and Comparators

The effectiveness of two epidermal growth factor receptor tyrosine kinases (EGFR TKIs), erlotinib and gefitinib, within their licensed indications were assessed. Studies that compared erlotinib or gefitinib with docetaxel or best supportive care (BSC) or where appropriate with each other were included in the review. Trials in which erlotinib was combined with other active treatments were excluded from the review.

Patient Populations

Patients with locally advanced or metastatic non-small-cell lung cancer (NSCLC) that has progressed following prior cancer treatment were included.

Outcomes

Data on any of the following outcomes were included in the assessment of clinical effectiveness: overall survival (OS), progression-free survival (PFS), response rates, adverse events (AEs), health-related quality-of-life. For the assessment of cost-effectiveness, outcomes included incremental cost per life year (LY) gained and incremental cost per quality-adjusted life year (QALY) gained.

Quantity and Quality of Research Available

A total of 1563 titles and abstracts were screened for inclusion in the review of clinical and cost-effectiveness evidence. Overall, 12 relevant RCTs were identified. The process of study selection is shown in Figure 1 of the Assessment Report.

The identified trials are summarised in Table 8 of the Assessment Report. A full list of publications that were excluded from the review following the application of the inclusion criteria is presented in Appendix 4 of the Assessment Report. The Assessment Group (AG) also identified and assessed the quality of existing systematic reviews in order to cross-check for the identification of additional studies as well as to gain an understanding of the issues related to the combining of data in this complex clinical area. A summary and critique of relevant systematic reviews is presented in Appendix 5 of the Assessment Report.

Assessment of Cost-effectiveness

Systematic Review of Existing Cost-effectiveness Evidence

Methods of Cost-effectiveness Review

Full details of the main search strategy conducted by the AG and the proposed methods for selecting clinic and economics evidence are presented above and in Section 5 of the Assessment Report. The AG did not use specific economics-related search terms in the main strategy as all of the potential references were scanned for references containing economic evidence. For the selection of cost-effectiveness evidence, two reviewers independently screened all economics-related titles/abstracts identified via searching and obtained full paper manuscripts of all relevant references. The relevance of each study was then assessed according to the specific inclusion and exclusion criteria shown in the table below. Data were extracted and summarised in structured tables and as a narrative description.

Inclusion Criteria for Economic Papers

Criteria	Inclusion	Exclusion
Intervention	Erlotinib or gefitinib	
Study Design	Full economic evaluation	Methodological, editorial, commentary, cost analysis, etc.
Type of Paper	Full paper	Abstract

In the National Health Service (NHS) in England and Wales (and elsewhere in the world), docetaxel is commonly used to treat patients with NSCLC who have progressed after chemotherapy and is therefore described as a relevant comparator to erlotinib and gefitinib in published economic evaluations. Recently, the price of docetaxel has fallen substantially due to the expiry of the manufacturer's patent. The AG discussed whether to exclude papers that presented data using the higher docetaxel price. The AG decided to include these papers but to highlight in the discussion section that the results of economic evaluations that only include docetaxel at its higher price are of limited relevance to this appraisal.

Until recently, patients who required post-progression treatment for NSCLC were treated as a homogeneous group. However, clinical practice is now changing and there is growing awareness that a patient's EGFR mutation status can affect treatment outcomes. With this in mind, the AG discussed excluding papers that did not consider how EGFR mutation status can affect patient outcomes and the treatment options available. However, on reflection the AG decided not to exclude these papers but to highlight in the discussion that the results of economic evaluations that only include patients with EGFR-unknown status should be treated with caution.

Quantity of Included Evidence

From the main search, the AG identified 44 potentially relevant economic papers for inclusion in the review of economic evidence. Of these, 16 papers were considered for inclusion after stage 1 screening. Of these 16 papers, ten papers were then excluded from the review and six papers were included in the review at stage 2. The reasons for excluding ten papers are listed in Table 24 of the Assessment Report.

From one of the systematic reviews, a further four papers were identified for inclusion in the AG's review. This finding alerted the AG to the fact that the main search had not picked up all of the relevant published economic studies available. The AG then carried out further searching using a combination of the following broad search terms to identify papers in MEDLINE and The Cochrane Library: erlotinib, gefitinib, lung cancer and cost. This additional generic search identified one more relevant paper.

In summary, the AG considered 11 papers to be eligible for inclusion in the review and these are listed in Table 25 of the Assessment Report.

Number of Source Documents

Clinical Effectiveness

A total of 12 randomized controlled trials (RCTs) reported in 25 publications met the criteria for inclusion into the review.

Cost-effectiveness

- Eleven papers were eligible for inclusion in the review.
- The manufacturer of erlotinib submitted an economic model.
- The Assessment Group (AG) also developed a cost-effectiveness model.

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): The National Institute for Health and Care Excellence (NICE) commissioned an independent academic centre to perform a systematic literature review on the technology considered in this appraisal and prepare an assessment report. The Assessment Report for this technology appraisal was prepared by the Liverpool Reviews and Implementation Group (LRiG) (see the "Availability of Companion Documents" field).

Assessment of Clinical Effectiveness

Data Extraction Strategy

Data relating to both study design and quality were extracted by two reviewers into an Excel spreadsheet. Two reviewers cross-checked each other's data extraction and where multiple publications of the same study were identified, data were extracted and reported as a single study.

Quality Assessment Strategy

The quality of clinical-effectiveness studies was assessed independently by two reviewers according the Centre for Reviews and Dissemination at

York University's suggested criteria. All relevant information is tabulated and summarised within the text of the report. Full details and results of the quality assessment strategy for clinical effectiveness studies are reported in Appendix 2 of the Assessment Report.

Methods of Data Synthesis

The results of the clinical data extraction and clinical study quality assessment are summarised in structured tables and as a narrative description. For patients who have progressed following prior treatment, the decision problem of interest to this review is made up of the following comparisons: the effectiveness of erlotinib and gefitinib in a population of patients with epidermal growth factor mutation positive (EGFR M+) tumours; the effectiveness of erlotinib and gefitinib in a population of patients with EGFR mutation negative (EGFR M-) tumours; and the effectiveness of erlotinib and gefitinib in an EGFR-unknown population (i.e., whose EGFR mutation status is unknown at the time of randomisation).

In view of the paucity of relevant data, the Assessment Group (AG) was unable to conduct either a meta-analysis or network meta-analysis in respect of the efficacy of treatments.

See Section 5 of the Assessment Report for more information on clinical effectiveness analysis.

Assessment of Cost-effectiveness

Quality of Included Evidence

The AG made the decision not to quality assess the papers included in the review of cost-effectiveness evidence. This decision was made because none of the 11 studies are directly relevant to UK health care decision-making as they do not use the off-patent price of docetaxel. Additionally, none of the studies consider the confirmed EGFR mutation status of the patient when assessing post-progression treatments.

Critique of Economic Analyses Submitted by Manufacturers

The manufacturer of gefitinib did not include any cost-effectiveness analyses in their submission. The objective of their submission was to demonstrate the clinical benefit of gefitinib therapy in EGFR M+ patients with non-small-cell lung cancer (NSCLC) following prior chemotherapy.

The manufacturer of erlotinib states that it does '…not believe it is possible to demonstrate [that] erlotinib is cost effective compared to docetaxel following the availability of generic docetaxel at less than 10% of the list price of docetaxel in NICE TA162.' The manufacturer's base-case analysis therefore compares erlotinib vs best supportive care in patients whose EGFR mutation status is unknown and who are unsuitable for docetaxel or who have previously received docetaxel, in a separate subgroup analysis, the manufacturer considers erlotinib vs best supportive care for patients with EGFR M- tumours. The AG provides a summary and critique of the economic evaluation presented in the MS submitted by Roche.

The AG notes that the manufacturer of erlotinib has not compared the cost-effectiveness of erlotinib with gefitinib. In the UK NHS, patients who have EGFR M+ tumours are likely to have received either erlotinib or gefitinib as a first-line treatment and it is, therefore, unlikely that this group of patients would be retreated with an EGFR-TKI as part of second-line treatment. The manufacturer therefore has not carried out an economic evaluation for this group of patients. Furthermore, as gefitinib does not have a licence for patients who have EGFR M- tumours, the manufacturer has not carried out an economic evaluation comparing erlotinib with gefitinib for this patient population.

Overview of Submitted Manufacturer's Submission

The manufacturer developed a de novo economic model using data from the BR.2131 trial. In the base-case analysis, the manufacturer compares erlotinib vs best supportive care using intention-to-treat (ITT) data from the BR.2131 trial. In a separate subgroup analysis, the manufacturer compares erlotinib vs best supportive care in an EGFR M- patient population only, this patient group was identified retrospectively.

The developed model is a partitioned survival model with three health states (a structure that has been used in many previous NICE oncology technology appraisals, including TA162, TA227 and TA295). The model projects progression-free survival (PFS) and overall survival (OS) independently with the proportion of patients in the progressed health state over time being the proportion of patients alive but not in the PFS health state.

The model structure is shown in Figure 2 of the Assessment Report. All patients enter the model in the PFS health state and in each month can either progress to a 'worse' health state (i.e. from PFS to progressed disease [PD] or from PD to Death) or remain in the same health state. The model has been developed in MS Excel and has a 1-week cycle length.

Refer to Section 6 of the Assessment Report for additional details concerning the manufacturer's model.

Assessment Group de novo Economic Model

To allow all therapy options for the post-progression treatment of patients with NSCLC to be compared using a consistent framework, the AG has developed a de novo cost-effectiveness model.

Assessment Perspective

Costs and outcomes are assessed from the perspective of the UK National Health Service (NHS) and Personal Social Services. Wider indirect costs and benefits (e.g., loss of productivity, value of informal care, and impact on utility of patient's family) are not considered.

Relevant Patient Populations

Three distinct populations are modelled as follows:

- Previously treated adult patients with locally advanced or metastatic NSCLC and who exhibit EGFR activating mutations (referred to as "EGFR M+ population")
- Previously treated adult patients with locally advanced or metastatic NSCLC and who do not exhibit EGFR activating mutations (referred to as "EGFR M- population")
- Previously treated adult patients with locally advanced or metastatic NSCLC and for whom EGFR mutation status is unknown or indeterminate (referred to as "EGFR-unknown population")

Treatment Options to Be Evaluated

Four pharmaceutical products are currently licenced for use in these populations:

1. Erlotinib and docetaxel may be used for treating patients in all three populations.
2. Gefitinib may only be used for patients with disease that exhibits EGFR activating mutations.
3. Pemetrexed may only be used for patients with predominantly non-squamous disease following platinum doublet chemotherapy as a first-line treatment. Pemetrexed was appraised as a second-line treatment for patients with NSCLC but not approved by NICE, and is not within the scope of the current re-appraisal.

Additionally, it is generally considered that a patient is unlikely to be retreated with the same agent that was used as a first-line therapy. This constraint should therefore be considered as a limiting consideration when interpreting the cost-effectiveness results in each of the above populations.

Time Horizon

A lifetime perspective is taken in the model, which projects all patient events and costs to a maximum of 5 years, at which time it is assumed that all patients will have died.

See Section 6 in the Assessment Report (see the "Availability of Companion Documents" field) for additional information on the cost-effectiveness analysis.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Considerations

Technology appraisal recommendations are based on a review of clinical and economic evidence.

Technology Appraisal Process

The National Institute for Health and Care Excellence (NICE) invites 'consultee' and 'commentator' organisations to take part in the appraisal process. Consultee organisations include national groups representing patients and carers, the bodies representing health professionals, and the manufacturers of the technology under review. Consultees are invited to submit evidence during the appraisal and to comment on the appraisal documents.

Commentator organisations include manufacturers of the products with which the technology is being compared, the National Health Service (NHS) Quality Improvement Scotland and research groups working in the area. They can comment on the evidence and other documents but are not asked to submit evidence themselves.

NICE then commissions an independent academic centre to review published evidence on the technology and prepare an Assessment Report. Consultees and commentators are invited to comment on the report. The assessment report and the comments on it are then drawn together in a document called the evaluation report.

An independent Appraisal Committee then considers the evaluation report. It holds a meeting where it hears direct, spoken evidence from nominated clinical experts, patients and carers. The Committee uses all the evidence to make its first recommendations, in a document called the Appraisal Consultation Document (ACD). NICE sends all the consultees and commentators a copy of this document and posts it on the NICE Web site. Further comments are invited from everyone taking part.

When the Committee meets again it considers any comments submitted on the ACD; then it prepares its final recommendations in a document called the Final Appraisal Determination (FAD). This is submitted to NICE for approval.

Consultees have a chance to appeal against the final recommendations in the FAD. If there are no appeals, the final recommendations become the basis of the guidance that NICE issues.

Who Is on the Appraisal Committee?

NICE technology appraisal recommendations are prepared by an independent committee. This includes health professionals working in the NHS and people who are familiar with the issues affecting patients and carers. Although the Appraisal Committee seeks the views of organisations representing health professionals, patients, carers, manufacturers and government, its advice is independent of any vested interests.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

Summary of Appraisal Committee's Key Conclusions

Availability and Nature of Evidence

The Committee concluded that it was only presented with cost-effectiveness estimates for erlotinib in the epidermal growth factor receptor tyrosine kinase (EGFR-TK) mutation-negative and EGFR-TK mutation-unknown populations.

Uncertainties Around and Plausibility of Assumptions and Inputs in the Economic Model

The Committee acknowledged that there was considerable uncertainty associated with choosing the most plausible incidence rate for febrile neutropenia.

The Committee was aware that it had not been presented with any cost-effectiveness analyses comparing erlotinib with docetaxel in the EGFR-TK mutation-unknown population.

The Committee was persuaded, however, that some patients whose disease is of unknown EGFR-TK mutation status can be recognised by clinical experts as having a high likelihood of testing positive for EGFR-TK mutations. It agreed that for these patients the economic modelling may well underestimate the benefits of erlotinib.

Incorporation of Health-related Quality-of-Life Benefits and Utility Values. Have Any Potential Significant and Substantial Health-related Benefits Been Identified That Were Not Included in the Economic Model, and How Have They Been Considered?

The Committee acknowledged that some people may have a preference for erlotinib because it is orally administered. It concluded that including a plausible estimation of the health-related quality-of-life benefits of oral treatment would not change its conclusion about the cost effectiveness of erlotinib in the EGFR-TK mutation-negative population for whom docetaxel is suitable.

Are There Specific Groups of People for Whom the Technology Is Particularly Cost Effective?

Not applicable

What Are the Key Drivers of Cost-effectiveness?

Not applicable

Most Likely Cost-effectiveness Estimate (Given as an Incremental Cost-effectiveness Ratio [ICER])

The Assessment Group's (AG's) economic model estimated that erlotinib resulted in higher costs with fewer quality-adjusted life years (QALYs) (that is, a health loss) compared with docetaxel in the EGFR-TK mutation-negative population for whom treatment with docetaxel is suitable.

In people with non-small-cell lung cancer (NSCLC) whose tumours test negative for the EGFR-TK mutation and for whom docetaxel is unsuitable, the most plausible ICER is likely to be over £50,000 per QALY gained for erlotinib compared with best supportive care.

The Committee highlighted its conclusion that the ICER comparing erlotinib with best supportive care was likely to be lower than those estimated by the company and the AG in the EGFR-TK mutation-unknown population with clinical characteristics suggestive of EGFR-TK mutation-positive tumours.

How Has the New Cost-effectiveness Evidence That Has Emerged Since the Original Appraisals (TA162 and TA175) Influenced the Current Recommendations?

The Committee noted that in the NICE technology appraisal guidance on gefitinib for the first-line treatment of locally advanced or metastatic NSCLC, there was both robust evidence and an agreed patient access scheme for gefitinib. In the absence of either for the use of gefitinib for treating NSCLC that has progressed after chemotherapy, the Committee agreed that it could not recommend gefitinib in this population.

The results of the first published trial directly comparing erlotinib with docetaxel in patients whose tumours tested negative for EGFR-TK mutations had become available (that is, the TAILOR trial). Additionally, the price of docetaxel reduced by approximately 90%, and the patient access scheme for erlotinib changed. The Committee was aware that direct evidence comparing erlotinib with docetaxel showed erlotinib was less clinically effective than docetaxel. It noted that the change in price of erlotinib was less relative to the change in price of docetaxel.

It was also aware that the AG's economic model estimated that erlotinib resulted in higher costs with fewer QALYs (that is, a health loss) compared with docetaxel. The Committee stated that without new evidence and consistent with the recommendation in the NICE technology appraisal guidance on erlotinib for the treatment of NSCLC, erlotinib after chemotherapy did not represent a cost-effective use of National Health Service (NHS) resources in people with NSCLC whose tumours test negative for the EGFR-TK mutation and for whom docetaxel is unsuitable.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

Consultee organizations from the following groups were invited to comment on the draft scope, Assessment Report and the Appraisal Consultation Document (ACD) and were provided with the opportunity to appeal against the Final Appraisal Determination.

- Manufacturer/sponsors
- Professional/specialist and patient/carer groups
- Commentator organisations (without the right of appeal)

In addition, individuals selected from clinical expert and patient advocate nominations from the professional/specialist and patient/carer groups were also invited to comment on the ACD.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The Appraisal Committee considered clinical and cost-effectiveness evidence from a literature review undertaken by an independent Assessment Group (AG) and submissions from the manufacturers of erlotinib and gefitinib that were reviewed by the AG. The main clinical effectiveness evidence came from randomised controlled trials. For cost-effectiveness, the Appraisal Committee considered economic models submitted by the manufacturer of erlotinib and by the AG.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

The Assessment Group's (AG's) report recognised that a drug taken orally may provide people with non-small-cell lung cancer with a valuable alternative to intravenous docetaxel.

Potential Harms

The summary of product characteristics lists the following as the most common adverse reactions for erlotinib: infection, anorexia, keratoconjunctivitis sicca, conjunctivitis, dyspnoea, cough, diarrhoea, nausea, vomiting, stomatitis, abdominal pain, rash, pruritus, dry skin and fatigue.

For full details of side effects and contraindications, see the summary of product characteristics.

Contraindications

Contraindications

For full details of side effects and contraindications, see the summary of product characteristics.

Qualifying Statements

Qualifying Statements

- This guidance represents the views of the National Institute for Health and Care Excellence (NICE) and was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.
- Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Implementation of the Guideline

Description of Implementation Strategy

- Section 7(6) of the National Institute for Health and Care Excellence (NICE) (Constitution and Functions) and the Health and Social Care Information Centre (Functions) Regulations 2013 requires clinical commissioning groups, National Health Services (NHS) England and, with respect to their public health functions, local authorities to comply with the recommendations in this appraisal within 3 months of its date of publication.

- The Welsh Assembly Minister for Health and Social Services has issued directions to the NHS in Wales on implementing NICE technology appraisal guidance. When a NICE technology appraisal recommends the use of a drug or treatment, or other technology, the NHS in Wales must usually provide funding and resources for it within 3 months of the guidance being published.
- When NICE recommends a treatment 'as an option', the NHS must make sure it is available within the period set out in the paragraph above. This means that, if a patient has non-small-cell lung cancer that has progressed after chemotherapy and the doctor responsible for their care thinks that erlotinib is the right treatment, it should be available for use, in line with NICE's recommendations.
- The Department of Health and the company have agreed that erlotinib will be available to the NHS with a patient access scheme which makes it available with a discount. The size of the discount is commercial in confidence. It is the responsibility of the company to communicate details of the discount to the relevant NHS organisations. Any enquiries from NHS organisations about the patient access scheme should be directed to karen.lightning-jones@roche.com.
- NICE has developed a costing report to estimate the national and local savings and costs associated with implementation (see also the "Availability of Companion Documents" field).

Implementation Tools

Mobile Device Resources

Patient Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

National Institute for Health and Care Excellence (NICE). Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed after prior chemotherapy. London (UK): National Institute for Health and Care Excellence (NICE); 2015 Dec 16. 65 p. (Technology appraisal guidance; no. 374).

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2015 Dec 16

Guideline Developer(s)

National Institute for Health and Care Excellence (NICE) - National Government Agency [Non-U.S.]

Source(s) of Funding

National Institute for Health and Care Excellence (NICE)

Guideline Committee

Appraisal Committee

Composition of Group That Authored the Guideline

Committee Members: Professor Andrew Stevens (*Chair of Appraisal Committee C*), Professor of Public Health, University of Birmingham; Professor Eugene Milne (*Vice Chair of Appraisal Committee C*), Director for Adult and Older Adult Health and Wellbeing, Public Health England; Professor Kathryn Abel, Director of Centre for Women's Mental Health, University of Manchester; Dr David Black, Medical Director, NHS South Yorkshire and Bassetlaw; Mr David Chandler, Lay member; Mrs Gail Coster, Advanced Practice Sonographer, Mid Yorkshire Hospitals NHS Trust; Professor Peter Crome, Honorary Professor, Department of Primary Care and Population Health, University College London; Professor Rachel A Elliott, Lord Trent Professor of Medicines and Health, University of Nottingham; Dr Greg Fell, Consultant in Public Health, Bradford Metropolitan Borough Council; Dr Alan Haycox, Reader in Health Economics, University of Liverpool Management School; Dr Janice Kohler, Senior Lecturer and Consultant in Paediatric Oncology, Southampton University Hospital Trust; Ms Emily Lam, Lay member; Dr Nigel Langford, Consultant in Clinical Pharmacology and Therapeutics and Acute Physician, Leicester Royal Infirmary; Dr Allyson Lipp, Principal Lecturer, University of South Wales; Dr Claire McKenna, Research Fellow in Health Economics, University of York; Professor Gary McVeigh, Professor of Cardiovascular Medicine, Queen's University Belfast and Consultant Physician, Belfast City Hospital; Dr Grant Maclaine, Formerly – Director, Health Economics and Outcomes Research, BD, Oxford; Dr Andrea Manca, Health Economist and Senior Research Fellow, University of York; Mr Henry Marsh, Consultant Neurosurgeon, St George's Hospital, London; Dr Suzanne Martin, Reader in Health Sciences; Dr Iain Miller, Founder and Chief Executive Officer, Health Strategies Group; Professor Stephen O'Brien, Professor of Haematology, Newcastle University; Dr Anna O'Neill, Deputy Head of Nursing and Healthcare School/Senior Clinical University Teacher, University of Glasgow; Dr Malcolm Oswald, Lay member; Dr Alan Rigby, Academic Reader, University of Hull; Professor Peter Selby, Consultant Physician, Central Manchester University Hospitals NHS Foundation Trust; Professor Matt Stevenson, Technical Director, School of Health and Related Research, University of Sheffield; Mr Cliff Snelling, Lay member; Professor Iain Squire, Consultant Physician, University Hospitals of Leicester; Dr Paul Tappenden, Reader in Health Economic Modelling, School of Health and Related Research, University of Sheffield; Professor Robert Walton, Clinical Professor of Primary Medical Care, Barts and The London School of Medicine and Dentistry; Dr Judith Wardle, Lay member

Financial Disclosures/Conflicts of Interest

Committee members are asked to declare any interests in the technology to be appraised. If it is considered there is a conflict of interest, the member is excluded from participating further in that appraisal.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: National Institute for Clinical Excellence (NICE). Erlotinib for the treatment of non-small-cell-lung cancer. London (UK): National Institute for Health and Clinical Excellence (NICE); 2008 Nov. 26 p. (Technology appraisal; no. 87).

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available for download in ePub and eBook formats from the NICE Web site .

Availability of Companion Documents

The following are available:

- Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed after prior chemotherapy. Resource impact report. London (UK): National Institute for Health and Care Excellence (NICE); 2015 Dec. 2 p. (Technology appraisal guidance 374). Available from the National Institute for Health and Care Excellence (NICE) Web site .
- Greenhalgh J, Bagust A, Boland A, Dwan K, Beale S, Hockenhull J, Proudlove C, Dundar Y, Richardson M, Dickson R, Mullard A, Marshall E. Erlotinib and gefitinib for treating non-small cell lung cancer that has progressed following prior chemotherapy (review of NICE technology appraisals 162 and 175). Liverpool (UK): Liverpool Reviews and Implementation Group (LRiG), University of Liverpool; 2013. 150 p. Available from the NICE Web site .

Patient Resources

The following is available:

- Erlotinib and gefitinib for treating non-small-cell lung cancer that has progressed after prior chemotherapy. Information for the public. London (UK): National Institute for Health and Care Excellence (NICE); 2015 Dec. 3 p. (Technology appraisal guidance 374). Available from the National Institute for Health and Care Excellence (NICE) Web site . Also available in ePub and eBook formats from the NICE Web site .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This NGC summary was completed by ECRI Institute on May 13, 2009. This summary was updated by ECRI Institute on March 28, 2016.

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